

FACILITY PERMIT TO OPERATE EI COLTON, LLC

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions** And Requirements	Conditions
Process 3 : RULE 219 EXEMPT					
RULE 219 EXEMPT EQUIPMENT, COATING EQUIPMENT, PORTABLE, ARCHITECTURAL COATINGS	E8			VOC: (9) [RULE 1113,11-8-1996;RULE 1113, 7-13-2007;RULE 1171,11-7-2003;RULE 1171, 2-1-2008]	K67.2
RULE 219 EXEMPT EQUIPMENT, EXEMPT HAND WIPING OPERATIONS	E12			VOC: (9) [RULE 1171,11-7-2003;RULE 1171,5-1-2009]	
RULE 219 EXEMPT EQUIPMENT, COOLING TOWERS	E13				

* (1)(1A)(1B) Denotes RECLAIM emission factor

(3) Denotes RECLAIM concentration limit

(5)(5A)(5B) Denotes command and control emission limit

(7) Denotes NSR applicability limit

(9) See App B for Emission Limits

(2)(2A)(2B) Denotes RECLAIM emission rate

(4) Denotes BACT emission limit

(6) Denotes air-toxic control rule limit

(8)(8A)(8B) Denotes 40 CFR limit(e.g. NSPS, NESHAPS, etc.)

(10) See Section J for NESHAP/MACT requirements

** Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

**FACILITY PERMIT TO OPERATE
EI COLTON, LLC**

SECTION D: DEVICE ID INDEX

**The following sub-section provides an index
to the devices that make up the facility
description sorted by device ID.**

**FACILITY PERMIT TO OPERATE
EI COLTON, LLC**

SECTION D: DEVICE ID INDEX

Device Index For Section D			
Device ID	Section D Page No.	Process	System
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E12	1	3	0
E13	1	3	0

FACILITY PERMIT TO OPERATE EI COLTON, LLC

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

FACILITY CONDITIONS

F9.1 Except for open abrasive blasting operations, the operator shall not discharge into the atmosphere from any single source of emissions whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:

(a) As dark or darker in shade as that designated No.1 on the Ringelmann Chart, as published by the United States Bureau of Mines; or

(b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subparagraph (a) of this condition.

[RULE 401, 3-2-1984; RULE 401, 11-9-2001]

DEVICE CONDITIONS

K. Record Keeping/Reporting

K67.2 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

For architectural applications where thinners, reducers, or other VOC containing materials are added, maintain daily records for each coating consisting of (a) coating type, (b) VOC content as applied in grams per liter (g/l) of materials used for low-solids coatings, (c) VOC content as applied in g/l of coating, less water and exempt solvent, for other coatings.

For architectural applications where no thinners, reducers, or other VOC containing materials are added, maintain semi-annual records for all coating consisting of (a) coating type, (b) VOC content as supplied in grams per liter (g/l) of materials for low-solids coatings, (c) VOC content as supplied in g/l of coating, less water and exempt solvent, for other coatings.

[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition : E8]

** Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device:

FACILITY PERMIT TO OPERATE EI COLTON, LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 1 : POWER GENERATION					
STEAM TURBINE, 15 MW					
CO OXIDATION CATALYST, JOHNSON MATTHEY, WITH 120 CUBIC FEET OF TOTAL CATALYST VOLUME A/N:	C3	D1 C4			
SELECTIVE CATALYTIC REDUCTION, CERAM, 1000 CU.FT.; WIDTH: 11 IN; HEIGHT: 51 FT; LENGTH: 3 FT WITH A/N: AMMONIA INJECTION, GRID	C4	C3 S6		NH3: 5 PPMV (4) [RULE 1303(a)(1)-BACT,5-10-1996]	A195.4, D12.1, D12.2, D12.3, E179.1, E179.2
STACK, HEIGHT: 106 FT; DIAMETER: 10 FT A/N:	S6	C4			
System 2 : EMERGENCY BLACKSTART ENGINE					
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, LEAN BURN, DIESEL FUEL, CATERPILLAR, MODEL CAT C27-750EKW, WITH PM FILTER, CLEARNAIR SYSTEMS PERMIT FILTER, WITH AFTERCOOLER, TURBOCHARGER, 1005 BHP A/N:	D11		NOX: PROCESS UNIT**	CO: 2.6 GRAM/BHP-HR DIESEL (4) [RULE 1703(a)(2) - PSD-BACT,10-7-1988] ; NOX: 469 LBS/1000 GAL DIESEL (1) [RULE 2012,5-6-2005]	B61.2, C1.2, C1.3, D12.4, D12.5, E193.1, E193.2, I296.2, K67.3

- * (1)(1A)(1B) Denotes RECLAIM emission factor
 (3) Denotes RECLAIM concentration limit
 (5)(5A)(5B) Denotes command and control emission limit
 (7) Denotes NSR applicability limit
 (9) See App B for Emission Limits

- (2)(2A)(2B) Denotes RECLAIM emission rate
 (4) Denotes BACT emission limit
 (6) Denotes air toxic control rule limit
 (8)(8A)(8B) Denotes 40 CFR limit(e.g. NSPS, NESHAPS, etc.)
 (10) See Section J for NESHAP/MACT requirements

** Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE EI COLTON, LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 1 : POWER GENERATION					
				NOX + ROG: 4.8 GRAM/BHP-HR DIESEL (4) [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1703(a)(2) - PSD-BACT, 10-7-1988] PM10: 0.011 GRAM/BHP-HR DIESEL (4) [RULE 1303(a)(1)-BACT, 12-6-2002]	
Process 2 : INORGANIC CHEMICAL STORAGE					
STORAGE TANK, PRESSURIZED, 19% AQUEOUS AMMONIA, WITH VAPOR BALANCE SYSTEM, 10000 GALS; WIDTH: 8 FT; HEIGHT: 15 FT; LENGTH: 28 FT A/N: 406070 Permit to Construct Issued: 01/10/03	D7				C157.1, E144.1

* (1)(1A)(1B) Denotes RECLAIM emission factor

(3) Denotes RECLAIM concentration limit

(5)(5A)(5B) Denotes command and control emission limit

(7) Denotes NSR applicability limit

(9) See App B for Emission Limits

(2)(2A)(2B) Denotes RECLAIM emission rate

(4) Denotes BACT emission limit

(6) Denotes air toxic control rule limit

(8)(8A)(8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)

(10) See Section J for NESHAP/MACT requirements

** Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE EI COLTON, LLC

SECTION H: DEVICE ID INDEX

**The following sub-section provides an index
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**FACILITY PERMIT TO OPERATE
EI COLTON, LLC**

SECTION H: DEVICE ID INDEX

Device Index For Section H			
Device ID	Section H Page No.	Process	System
D1	1.	1	0
C3	2	1	0
C4	2	1	0
S6	2	1	0
D7	3	2	0
D11	2	1	2

FACILITY PERMIT TO OPERATE EI COLTON, LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

FACILITY CONDITIONS

F9.1 Except for open abrasive blasting operations, the operator shall not discharge into the atmosphere from any single source of emissions whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:

- (a) As dark or darker in shade as that designated No.1 on the Ringelmann Chart, as published by the United States Bureau of Mines; or
- (b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subparagraph (a) of this condition.

[RULE 401, 3-2-1984; RULE 401, 11-9-2001]

DEVICE CONDITIONS

A. Emission Limits

A63.1 The operator shall limit emissions from this equipment as follows:

CONTAMINANT	EMISSIONS LIMIT
PM10	Less than or equal to 2105 LBS IN ANY ONE MONTH
VOC	Less than or equal to 793 LBS IN ANY ONE MONTH
SOX	Less than or equal to 104 LBS IN ANY ONE MONTH

The operator shall calculate the monthly emissions for VOC, PM10, and SOx using the equation below and the following emission factors: VOC: 2.32 lb/mmcf; PM10: 6.16 lb/mmcf; and SOx: 0.304 lb/mmcf

Monthly Emissions, lb/mon = X (EF); where X = monthly fuel usage, mmcf/month and EF = emission factor indicated above

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002]

[Devices subject to this condition : D1]

FACILITY PERMIT TO OPERATE EI COLTON, LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

- A99.1 The 2.0 PPM NOX emission limit(s) shall not apply during turbine commissioning, start-up or shutdown periods. Commissioning shall not exceed 478 hours. Written records of commissioning, start-ups and shutdowns shall be maintained and made available to the AQMD upon request..

[**RULE 2005, 4-9-1999; RULE 2005, 4-20-2001**]

[Devices subject to this condition : D1]

- A99.2 The 2.0 PPM CO emission limit(s) shall not apply during turbine commissioning, start-up or shutdown periods. Commissioning shall not exceed 478 hours. Written records of commissioning, start-up and shutdowns shall be maintained and made available to the AQMD upon request..

[**RULE 1303(a)(1)-BACT, 5-10-1996**]

[Devices subject to this condition : D1]

- A99.3 The 2.0 PPM VOC emission limit(s) shall not apply during turbine commissioning, start-up or shutdown periods. Commissioning shall not exceed 478 hours. Written records of commissioning, start-ups and shutdowns shall be maintained and made available to the AQMD upon request..

[**RULE 2005, 4-9-1999; RULE 2005, 4-20-2001**]

[Devices subject to this condition : D1]

- A195.1 The 2.0 PPMV CO emission limit(s) is averaged over 60 minutes at 15 percent O2, dry basis.

[**RULE 1703(a)(2) - PSD-BACT, 10-7-1988; RULE 2005, 4-9-1999; RULE 2005, 4-20-2001**]

[Devices subject to this condition : D1]

- A195.2 The 2.0 PPMV NOX emission limit(s) is averaged over 60 minutes at 15 percent O2, dry basis.

[**RULE 1703(a)(2) - PSD-BACT, 10-7-1988**]

[Devices subject to this condition : D1]

FACILITY PERMIT TO OPERATE EI COLTON, LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

A195.3 The 2 PPMV VOC emission limit(s) is averaged over 60 minutes at 15 percent O₂, dry basis.

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : D1]

A195.4 The 5 PPMV NH₃ emission limit(s) is averaged over 60 minutes at 15 percent O₂, dry basis. The operator shall calculate and continuously record the NH₃ slip concentration using the following:

$$\text{NH}_3 \text{ (ppmv)} = [a-b*c/1\text{EE}+06]*1\text{EE}+06/b$$

where, a = NH₃ injection rate (lb/hr)/17 lb/lb-mol

b = bry exhaust gas flow rate, (scf/hr)/385.3 scf/lb-mol

c = change in measured NO_x across the SCR, ppmvd at 15% O₂

The operator shall install and maintain a NO_x analyzer to measure the SCR inlet NO_x ppmv accurate to plus or minus 5 percent, calibrated at least once every 12 months

The NO_x analyzer shall be installed and operated within 90 days of initial start-up

The operator shall use the above described method or another alternative method approved by the Executive Officer

The ammonia slip calculation procedures described above shall not be used for compliance determination or emission information without corroborative data using an approved reference method for the determination of ammonia

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 2012, 5-6-2005]

[Devices subject to this condition : C4]

A327.1 For the purpose of determining compliance with District Rule 475, combustion contaminant emissions may exceed the concentration limit or the mass emission limit listed, but not both limits at the same time.

[RULE 475, 10-8-1976; RULE 475, 8-7-1978]

[Devices subject to this condition : D1]

FACILITY PERMIT TO OPERATE EI COLTON, LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

A433.1 The operator shall comply at all times with the 2.0 ppm 1-hour BACT limit for NO_x, except as defined in condition A99.1 and for the following scenario:

Operating Scenario	Maximum Hourly Emission Limit	Operational Limit
Cold Start	21.6 lb/hr	NO _x emissions not to exceed 36 lbs total per start-up per turbine. The turbine shall be limited to 12 cold start-ups per year, with each start-up not to exceed 100 minutes.
Hot Start	22.29 lb/hr	NO _x emissions not to exceed 26 lbs total per start-up per turbine. The turbine shall be limited to 365 start-ups per year, with each start-up not to exceed 60 minutes.

[RULE 1703(a)(2) - PSD-BACT, 10-7-1988; RULE 2005, 5-6-2005]

[Devices subject to this condition : D1]

B. Material/Fuel Type Limits

FACILITY PERMIT TO OPERATE EI COLTON, LLC

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The operator shall comply with the terms and conditions set forth below:

B61.1 The operator shall not use natural gas containing the following specified compounds:

Compound	Range	grain per 100 scf
H2S	greater than	0.25

This concentration limit is an annual average based on monthly samples of natural gas composition or gas supplier documentation. The gaseous fuel sample shall be tested using District Method 307-91 for total sulfur calculated as H2S.

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002]

[Devices subject to this condition : D1]

B61.2 The operator shall only use diesel fuel containing the following specified compounds:

Compound	Range	ppm by weight
Sulfur	less than or equal to	15

[RULE 431.2, 5-4-1990; RULE 431.2, 9-15-2000]

[Devices subject to this condition : D11]

C. Throughput or Operating Parameter Limits

FACILITY PERMIT TO OPERATE EI COLTON, LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

- C1.1 The operator shall limit the fuel usage to no more than 341 MM cubic feet in any one calendar month.

The operator shall maintain records in a manner approved by the District, to demonstrate compliance with this condition.

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002]

[Devices subject to this condition : D1]

- C1.2 The operator shall limit the operating time to no more than 17 hour(s) in any one year.

For the purpose of this condition, the operating time is inclusive of time allotted for maintenance and testing.

[RULE 1110.2, 2-1-2008; RULE 1304(d)- Facility Exemption, 6-14-1996; RULE 2012, 5-6-2005]

[Devices subject to this condition : D11]

- C1.3 The operator shall limit the operating time to no more than 1.4 hour(s) in any one month.

For the purpose of this condition, the operating time is inclusive of time allotted for maintenance and testing.

[RULE 1110.2, 2-1-2008; RULE 1304(d)- Facility Exemption, 6-14-1996; RULE 2012, 5-6-2005]

[Devices subject to this condition : D11]

- C157.1 The operator shall install and maintain a pressure relief valve set at 25 psig.

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : D7]

D. Monitoring/Testing Requirements

FACILITY PERMIT TO OPERATE EI COLTON, LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

- D12.1 The operator shall install and maintain a(n) flow meter to accurately indicate the flow rate of the total hourly throughput of injected ammonia.

The operator shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every 12 months.

The ammonia injection rate shall not exceed 3.10 lb/hr

[RULE 1703(a)(2) - PSD-BACT, 10-7-1988; RULE 2005, 4-20-2001]

[Devices subject to this condition : C4]

- D12.2 The operator shall install and maintain a(n)-temperature gauge to accurately indicate the temperature in the exhaust at the inlet to the SCR reactor.

The operator shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every 12 months.

The catalyst temperature shall not exceed 800 degrees F during the start-up period

The temperature shall remain between 500 degrees F and 800 degrees F

[RULE 2012, 5-11-2001; RULE 2012, 12-5-2003]

[Devices subject to this condition : C4]

FACILITY PERMIT TO OPERATE EI COLTON, LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

- D12.3 The operator shall install and maintain a(n) pressure gauge to accurately indicate the differential pressure across the SCR catalyst bed in inches water column.

The operator shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every 12 months.

The pressure drop across the catalyst shall remain between 5 inches of water column and 7.6 inches of water column

The pressure drop across the catalyst shall not exceed 7.6 inches of water column during the start-up period

[RULE 2012, 5-11-2001; RULE 2012, 12-5-2003]

[Devices subject to this condition : C4]

- D12.4 The operator shall install and maintain a(n) non-resettable elapsed time meter to accurately indicate the elapsed operating time of the engine.

[RULE 1304(c)-Offset Exemption, 6-14-1996; RULE 1470, 6-1-2007; RULE 2012, 5-6-2005]

[Devices subject to this condition : D11]

- D12.5 The operator shall install and maintain a(n) non-resettable totalizing fuel meter to accurately indicate the fuel usage of the engine.

[RULE 1304(c)-Offset Exemption, 6-14-1996; RULE 1470, 6-1-2007; RULE 2012, 5-6-2005]

[Devices subject to this condition : D11]

FACILITY PERMIT TO OPERATE EI COLTON, LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

D29.1 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NH3 emissions	District method 207.1 and 5.3 or EPA method 17	1 hour	Outlet of the SCR serving this equipment

The test(s) shall be conducted at least quarterly during the first 12 months of operation and at least annually thereafter. The NOx concentration, as determined by the CEMS, shall be simultaneously recorded during the ammonia slip test. If the CEMS is inoperable, a test shall be conducted to determine the NOx emissions using District Method 100.1 measured over a 60 minute averaging time period.

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration limit.

The test shall be conducted and the results submitted to the AQMD permitting engineer within 45 days after the test date. The AQMD shall be notified of the date and time of the test at least 7 days prior to the test.

If the equipment is not operated in any given quarter, the operator may elect to defer the required testing to a quarter in which the equipment is operated

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : D1]

FACILITY PERMIT TO OPERATE EI COLTON, LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

D29.2 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NOX emissions	District method 100.1	1 hour	Outlet of the SCR serving this equipment
CO emissions	District method 100.1	1 hour	Outlet of the SCR serving this equipment
SOX emissions	Approved District method	District-approved averaging time	Fuel sample
VOC emissions	Approved District method	1 hour	Outlet of the SCR serving this equipment
PM emissions	District method 5.2	District-approved averaging time	Outlet of the SCR serving this equipment
NH3 emissions	District method 5.2	1 hour	Outlet of the SCR serving this equipment

The test shall be conducted after AQMD approval of the source test protocol, but not later than 180 days after initial start-up. The AQMD shall be notified of the date and time of the test at least 10 days prior to the test.

The test shall be conducted to determine the oxygen levels in the exhaust. In addition, the tests shall measure the fuel flow rate (CFH), the flue gas flow rate, and the turbine generating output (MW).

The test shall be conducted in accordance with a District approved source test protocol. The protocol shall be submitted to the District permitting engineer no later than 45 days before the proposed test date and shall be approved by the District before the test commences. The protocol shall include the proposed operating conditions of the turbine during the tests, the identity of the testing lab, a statement from the lab certifying that it meets the criteria of R304, and a description of all sampling and analytical procedures.

The test shall be conducted for compliance verification of the BACT VOC 2.0 ppmv limit..

For nat gas fired turbines only, VOC compliance shall be demonstrated as follows: a) Stack gas samples are extracted into Summa canisters, maintaining a final canister pressure between 400 - 500 mm Hg absolute, b) Pressurization of canisters are done with zero gas analyzed/certified to contain less than 0.05 ppmv total hydrocarbon as carbon, and c) Analysis of canisters are per EPA Method TO-12 (with pre-concentration) and temperature of canisters when extracting samples for analysis is not below 70 deg. F.

The use of this alternative method for VOC compliance determination does not mean that it is more accurate than AQMD Method 25.3, nor does it mean that it may be used in lieu of AQMD method 25.3 without prior approval, except for the determination of compliance with the VOC BACT level of 2.0 ppmv calculated as

FACILITY PERMIT TO OPERATE EI COLTON, LLC

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The operator shall comply with the terms and conditions set forth below:

carbon for natural gas fired turbines.

Because the VOC BACT level was set using data derived from various source test methods, this alternate VOC compliance method provides a fair comparison and represents the best sampling and analysis technique for this purpose at this time. The test results shall be reported with two significant digits

The test shall be conducted when this equipment is operating at maximum, average, and minimum load.

For the purpose of this condition, alternative test methods may be allowed for each of the above pollutants upon concurrence of EPA and AQMD.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(b)(2)-Offset, 5-10-1996; RULE 2005, 4-9-1999; RULE 2005, 4-20-2001]

[Devices subject to this condition : D1]

FACILITY PERMIT TO OPERATE EI COLTON, LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

D29.3 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
SOX emissions	Approved District method	District-approved averaging time	Fuel sample
VOC	Approved District method	1 hour	Outlet of the SCR serving this equipment
PM emissions	District method 5.2	District-approved averaging time	Outlet of the SCR serving this equipment

The test shall be conducted at least once every three years for SOx and PM10 and yearly for VOC.

The test shall be conducted and the results submitted to the District within 60 days after the test date. The AQMD shall be notified of the date and time of the test at least 7 days prior to the test.

The test shall be conducted when the equipment is operating at 100 percent load.

The test shall be conducted to determine the oxygen levels in the exhaust. In addition, the tests shall measure the fuel flow rate (CFH), the flue gas flowrate, and the turbine generating capacity in MW.

The test shall be conducted for compliance verification of the BACT VOC 2.0 ppmv limit.

The test shall be conducted in accordance with an AQMD approved test protocol. The protocol shall be submitted to the AQMD engineer no later than 45 days before the proposed test date and shall be approved by the AQMD before the test commences. The test protocol shall include the proposed operating conditions of the turbine during the tests, the identity of the testing lab, a statement from the testing lab certifying that it meets the criteria of Rule 304, and a description of all sampling and analytical procedures.

For gas fired turbines only, VOC compliance shall be demonstrated as follows: a) Stack gas samples are extracted into Summa canisters, maintaining a final canister pressure between 400 - 500 mm Hg absolute, b) Pressurization of canisters are done with zero gas analyzed/certified to contain less than 0.05 ppmv total hydrocarbon as carbon, and c) Analysis of canisters are per EPA Method TO-12 (with pre-concentration) and temperature of canisters when extracting samples for analysis is not below 70 deg. F.

The use of this alternative method for VOC compliance determination does not mean that it is more accurate than AQMD Method 25.3, nor does it mean that it may be used in lieu of AQMD method 25.3 without prior approval, except for the determination of compliance with the VOC BACT level of 2.0 ppmv calculated as carbon for natural gas fired turbines.

Because the VOC BACT level was set using data derived from various source test methods, this alternate

FACILITY PERMIT TO OPERATE EI COLTON, LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

VOC compliance method provides a fair comparison and represents the best sampling and analysis technique for this purpose at this time. The test results shall be reported with two significant digits

For the purpose of this condition, alternative test methods may be allowed for each of the above pollutants upon concurrence of EPA and AQMD

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(b)(2)-Offset, 5-10-1996; RULE 2005, 4-9-1999; RULE 2005, 4-20-2001]

[Devices subject to this condition : D1]

D82.1 The operator shall install and maintain a CEMS to measure the following parameters:

CO concentration in ppmv

Concentrations shall be corrected to 15 percent oxygen on a dry basis.

The CEMS will convert the actual CO concentrations to mass emission rates (lbs/hr) and record the hourly emission rates on a continuous basis.

CO Emission Rate, lb/hr = $k \cdot C_{co} \cdot F_d [20.9 / (20.9 - \%O_{2d})] [Q_g \cdot HHV / 106]$, where $k = 7.27 \times 10^{-8}$ 9lb/scf)/ppm; C_{co} = Average of 4 consecutive 15 minute ave CO concentrations, ppm, F_d = 8710 dscf/MMBTU natural gas, $\%O_{2d}$ = hourly ave % by vol O2 dry, corresponding to C_{co} ; Q_g = Fuel gas usage, scfh, HHV = Higher heating value of fuel gas, BTU/scf

The CEMS shall be installed and operated no later than 90 days after initial start up of the turbine, and in accordance with an approved AQMD Rule 218 CEMS plan application. The operator shall not install the CEMS prior to receiving initial approval from AQMD. Within two weeks of the turbine startup date, the operator shall provide written notification to the District of the exact date of start-up.

The CEMS shall be installed and operated to measure CO concentration over a 15 minute averaging time period.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 218, 8-7-1981; RULE 218, 5-14-1999]

[Devices subject to this condition : D1]

FACILITY PERMIT TO OPERATE EI COLTON, LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

D82.2 The operator shall install and maintain a CEMS to measure the following parameters:

NOX concentration in ppmv

Concentrations shall be corrected to 15 percent oxygen on a dry basis.

The CEMS shall be installed and operating no later than 90 days after initial start-up of the turbine and shall comply with the requirements of Rule 2012. During the interim period between the initial start-up and the provisional certification date of the CEMS, the operator shall comply with the monitoring requirements of Rule 2012(h)(2) and 2012(h)(3). Within two weeks prior to the turbine startup date, the operator shall provide written notification to the District of the exact date of start-up.

[RULE 2012, 5-11-2001; RULE 2012, 12-5-2003]

[Devices subject to this condition : D1]

E. Equipment Operation/Construction Requirements

E144.1 The operator shall vent this equipment, during filling, only to the vessel from which it is being filled.

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : D7]

E179.1 For the purpose of the following condition number(s), continuously record shall be defined as recording at least once every hour and shall be calculated upon the average of the continuous monitoring for that hour.

Condition Number D 12- 1

Condition Number D 12- 2

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 2012, 5-11-2001; RULE 2012, 12-5-2003]

[Devices subject to this condition : C4]

FACILITY PERMIT TO OPERATE EI COLTON, LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

E179.2 For the purpose of the following condition number(s), continuously record shall be defined as recording at least once every month and shall be calculated upon the average of the continuous monitoring for that month:

Condition Number D 12- 3

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 2012, 5-11-2001; RULE 2012, 12-5-2003]

[Devices subject to this condition : C4]

E193.1 The operator shall operate and maintain this equipment according to the following requirements:

This equipment shall only operate if utility electricity is not available

This equipment shall only be operated for the primary purpose of providing a backup source of power to drive an emergency blackstart engine

This equipment shall only be operated under limited circumstances under a Demand Response Program

This equipment shall only be operated for maintenance and tested, not to exceed 17 hours in one year

An engine operating log shall be kept in writing, listing and date of operation, the elapsed time, in hours, and the reason for operation. The log shall be maintained for a minimum of 5 years and made available to AQMD personnel upon request

[RULE 1110.2, 2-1-2008; RULE 1470, 6-1-2007]

[Devices subject to this condition : D11]

FACILITY PERMIT TO OPERATE EI COLTON, LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

E193.2 The operator shall operate and maintain this equipment according to the following specifications:

The Cleanair Systems "PERMIT" filter system installed for the equipment shall be operated according to the following criteria: (1) The maximum consecutive minutes at idle shall not exceed 240 minutes; (2) The number of 10 minute idle sessions before regeneration is required shall be after 24 consecutive sessions; (3) The minimum temperature /load/time for regeneration shall not be less than 40% load of 300 deg C for 30% of operating time or 2 hours, whichever is longer.

The Cleanair Systems "PERMIT" filter systems installed for the equipment shall be provided with a data logging and alarm system to record and monitor the equipment's exhaust backpressure and temperature during operation

[RULE 1303(a)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1470, 6-1-2007]

[Devices subject to this condition : D11]

I. Administrative

I296.1 This equipment shall not be operated unless the operator demonstrates to the Executive Officer that the facility holds sufficient RTCs to offset the prorated annual emissions increase for the first compliance year of operation. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at the commencement of each compliance year after the first compliance year of operation, the facility holds sufficient RTCs in an amount equal to the annual emissions increase.

[RULE 2005, 4-9-1999; RULE 2005, 4-20-2001]

[Devices subject to this condition : D1]

FACILITY PERMIT TO OPERATE EI COLTON, LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

- I296.2 This equipment shall not be operated unless the operator demonstrates to the Executive Officer that the facility holds sufficient RTCs to offset the prorated annual emissions increase for the first compliance year of operation. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at the commencement of each compliance year after the first compliance year of operation, the facility holds sufficient RTCs in an amount equal to the annual emissions increase.

To comply with this condition, the operator shall, prior to each compliance year hold a minimum NOx RTCs of 181 lbs.

In accordance with Rule 2005(f), unused RTCs may be sold only during the reconciliation period for the fourth quarter of the applicable compliance year inclusive of the 1st compliance year

[RULE 2005, 5-6-2005]

[Devices subject to this condition : D11]

K. Record Keeping/Reporting

FACILITY PERMIT TO OPERATE EI COLTON, LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

K40.1 The operator shall provide to the District a source test report in accordance with the following specifications:

Source test results shall be submitted to the District no later than 60 days after the source test was conducted.

Emission data shall be expressed in terms of concentration (ppmv), corrected to 15 percent oxygen, dry basis.

All exhaust flow rate shall be expressed in terms of dry standard cubic feet per minute (DSCFM) and dry actual cubic feet per minute (DACFM).

All moisture concentration shall be expressed in terms of percent corrected to 15 percent oxygen.

Emission data shall be expressed in terms of mass rate (lbs/hr). In addition, solid PM emissions, if required to be tested, shall also be reported in terms of grains per DSCF.

Source test results shall also include turbine fuel flow and exhaust gas rate under which the test was conducted.

Source test results shall also include turbine and generator output under which the test was conducted.

Emission data shall be expressed in terms of lbs/MM cubic feet.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(b)(2)-Offset, 5-10-1996; RULE 2005, 4-9-1999; RULE 2005, 4-20-2001]

[Devices subject to this condition : D1]

K67.1 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Natural gas usage during the commissioning period.

Natural gas usage after the commissioning period and prior to CEMS certification.

Natural gas usage after the CEMS certification.

[RULE 2012, 5-11-2001; RULE 2012, 12-5-2003]

[Devices subject to this condition : D1]

FACILITY PERMIT TO OPERATE EI COLTON, LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

K67.3 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Date of operation, elapsed time, in hours, and the reason for operation

[RULE 1110.2, 2-1-2008]

[Devices subject to this condition : D11]

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EI COLTON, LLC ENGINEERING EVALUATION
--

COMPANY NAME AND ADDRESS

EI Colton, LLC
160 South 10th Street
Colton, CA 92324

EQUIPMENT LOCATION

2040 Agua Mansa Road
Colton, CA 92324

Contact: Mr. Wayne Feragen (909) 825-1679
AQMD Facility ID: 133813

EQUIPMENT DESCRIPTION
Section H of the Facility Permit

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
Process 1: POWER GENERATION					
GAS TURBINE, UNIT NO. 5, NATURAL GAS, GENERAL ELECTRIC, MODEL LM6000, SIMPLE CYCLE COMBINED CYCLE, WITH WATER INJECTION, 456.5 MMBTU/HR, WITH A/N: 492206 GENERATOR, HEAT RECOVERY STEAM, UNFIRED STEAM TURBINE, 15 MW GENERATOR, 48 MW	D1	C3	NOX: MAJOR SOURCE	CO: 6-2.0 PPMV NATURAL GAS (4) [Rule 1703(a)(2)-PSD-BACT]; CO: 2000 PPMV (5) [Rule 407] NOX: 15 PPMV NATURAL GAS (8) [40CFR60 Subpart KKKK] NOX: 16-55 LB/MMCF NATURAL GAS (1) [Rule 2012] NOX: 8-66 LB/MMCF NATURAL GAS (1A) [Rule 2012] NOX: 3-5 2.0 PPMV NATURAL GAS (4) [Rule 2005-BACT, Rule 1703(a)(2)-PSD-BACT]; VOC: 2.0 PPMV (4) [Rule 1303(a)(1)-BACT] PM10: 0.01 GRAIN/DSCF (5) [Rule 475]; PM10: 0.1 GRAIN/DSCF (5A) [Rule 409]; PM10: 11 LB/HR (5B) [Rule 475]; SOX: 150 PPMV (8) [40 CFR60 Subpart GG] 0.06 LB/MMBTU (8) [40 CFR60 Subpart KKKK] SO2: (9) 40CFR72-Acid Rain Provisions	A63.1, A99.1, A99.2, A99.3, A195.1, 195.2, A195.3, A327.1, A433.1, B61.1, C1.1, D29.1, D29.2, D29.3, D82.1, D82.2, I296.1, K40.1, K67.1

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MODIFIED DESIGN

Table 1 - Original versus Modified Design

El Colton submitted the following applications for modification to the existing power plant.

Application Number	Equipment Description	Deemed Complete
492206	General Electric LM6000 Gas Turbine	February 10, 2009
492207	SCR/CO Catalyst	February 10, 2009
492208	Emergency Diesel Black Start Engine	February 10, 2009
492205	Title V Modification	February 10, 2009

Processing Fee Summary

Table 3 - Summary of Permit Processing Fees

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Table 5 - Black Start Engine Specifications

Parameter	Specifications
Manufacturer	Caterpillar
Model	CAT C27-750eKW
HP rating	1005 bhp
Fuel type	No. 2 Diesel
Cycle type	Four cycle
Combustion type	Lean Burn
No. of cylinders	12
Aspiration type	Turbocharged/aftercooled
APC equipment	Meets Tier II Emissions
Fuel Consumption	53.5 gal/hr
Annual operating schedule	≤ 200 hours

APC Equipment

The CTG will be equipped with an upgraded SCR catalyst with ammonia injection which will be used downstream of the CTG for reduction of NOx emissions. The new SCR and CO catalysts will be located within the new HRSG. According to the applicant, re-use of the existing catalysts is not practical due to the change in duct geometry and changes in the flue gas temperature and flow characteristics in the HRSG compared to those for the existing SCR. With the new SCR, the NOx emissions will be reduced to 2.0 ppmv, 1-hour average, dry basis at 15% O₂. The oxidation catalyst is expected to achieve CO and VOC emissions of 2.0 ppmv, dry basis at 15% O₂. SOx and PM₁₀ emissions will be mitigated through the use of PUC-quality natural gas. Detailed specifications of the air pollution control system are given in Tables 6 and 7 below.

Table 6 - SCR Specifications

Catalyst Properties	Specifications
Manufacturer	CERAM
Catalyst Description	Titanium-Vanadium-Tungsten formulation in either homogenous ceramic based honeycomb or plate type wash coat design
Catalyst Dimensions	To Be Determined
Catalyst Volume	1,000 cubic feet
Catalyst Life	3 years or 24,000 hrs from first fire, or 39 months from delivery
Space Velocity	24,000 hr ⁻¹
Ammonia Injection Rate	125 lb/hr
NOx at stack outlet	2.0 ppmv at 15% O ₂ , dry basis
Ammonia Slip	5.0 ppmv at 15% O ₂ , dry basis
Maximum Operating Temperature	800 deg F
Minimum Operating Temperature	500 deg F
SCR Replacement Cost	\$270,000

The SCR catalyst will use ammonia injection in the presence of the catalyst to reduce NOx. Diluted ammonia vapor will be injected into the exhaust gas stream via a grid of nozzles located upstream of the catalyst module. The subsequent chemical reaction will reduce NOx to elemental nitrogen (N₂) and water, resulting in NOx concentrations in the exhaust gas at no greater than 2.0 ppmvd at 15% O₂ on a 1-hour average.

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ammonia vaporization skids are typically configured with two dilution air fans (one operating and one spare) and two pre-heater elements (one operating and one spare) housed in a common heater box. In addition, the aqueous ammonia is typically atomized in the ammonia injection chamber and is then fed to the ammonia distribution header.

Ammonia Distribution Header

A carbon steel ammonia distribution header will be used to receive the hot ammonia/air mixture from the ammonia vaporization skid and deliver it evenly to the ammonia injection grid piping. Typically, the injection grid supply piping is equipped with manual butterfly valves and flow instrumentation used for adequate balancing of ammonia flow.

COMPLIANCE RECORD

A check of the AQMD's Compliance Tracking System database indicates that no NOV or NCs were issued to this facility during the period of February 2007 through February 2009.

Performance Warranties

The applicant has submitted two letters to AQMD (one dated December 18, 2008 for the SCR unit and the other from Johnson Matthey for the CO catalyst) each indicating that the equipment, when installed and operated according to manufacturer specifications, will comply with the combined cycle BACT requirements listed in Table 8 below.

Table 8 - Warranted Emissions

Pollutant	Warranted Emissions
NOx	2.0 ppmv at 15% O ₂
CO	2.0 ppmv at 15% O ₂
VOC	2.0 ppmv at 15% O ₂
NH ₃ Slip	5.0 ppmv at 15% O ₂

CRITERIA POLLUTANT EMISSIONS

The total emissions from the CTG are based on the following formula and assumptions:

$$EF(\text{lb/MMBTU}) = \text{ppmvd} \times MW \times \left(\frac{1}{\text{SMV}} \right) \left(\frac{20.9}{5.9} \right) \times F_d$$

where,

ppmvd = Uncontrolled (or controlled) concentration at 15% O₂, dry basis

MW = Molecular weight, lb/lb-mol

SMV = Specific molar volume at 68°F = 385.3 dscf/lb-mol

F_d = Dry oxygen f-factor for natural gas at 68°F = 8,710 dscf/MMBTU

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mode						
Verify STG on Tuning Gear; Establish Vacuum in ACC; Place unit in Bypass mode	12	50-75	38.7	11.16	2.08	19.49
Verify STG on Tuning Gear; Establish Vacuum in ACC; Place unit in Bypass mode	36	75-100	116.1	33.48	6.24	58.47
CTG Base Load Commissioning of Ammonia System	24	100	84	24	4.56	41.76
Bypass Operation Unit1 Steam Quality Achieved/STG Initial Roll and Trip Test	10	10-50	250.4	78.8	1.28	7.16
STG Load Testing	24	10-50	279.8	91.4	3.24	21.58
STG Load Testing	24	50-100	75.4	23.28	4.18	37.7
Combined Cycle Testing	24	10-100	293.6	92.28	3.66	28.88
Emissions Tuning	24	50-100	66.8	22.56	3.8	33.64
RATA Pre-performance testing/Source Testing/Drift Testing	264	100	462	132	25.08	229.68
Performance Testing	24	50-100	84	24	4.56	41.76
ISO Certification	12	50-100	33.4	11.28	1.9	16.82
TOTAL COMMISSIONING HOURS	478	//////////	5,063.04	1,985.46	85.64	617.54

Emissions

Emissions from the gas turbine will consist of all 5 criteria pollutants plus toxics. Emissions are calculated for 4 basic operational modes as follows: Table 10 below shows the specific operational scenarios for the EI Colton CTG.

1. Commissioning – A one-time event which occurs following installation / modification and just prior to bringing the turbine online for commercial operation.
2. Start-up – Occurs each time the turbine started
3. Normal operation
4. Shutdown – Occurs each time the turbine is shut down

Table 10 - Operational Scenarios for EI Colton

Mode	Description
Commissioning	Facility follows a systematic approach to optimizing the performance of the CTG by fine-tuning each of the units at zero load, partial load, and full load. This procedure is usually performed immediately after construction and prior to commercial operation. Several parameters, such as gas turbine load, degree of combustor tuning, and degree of SCR control may be varied simultaneously or individually during commissioning at the discretion of the applicant. Emissions are expected to be greater during commissioning than during normal operation for some pollutants due to the fact that the combustors may not be optimally tuned and the SCR systems may be only partially operational or not operational at all. The commissioning period is expected to last for approximately 478 hours per turbine over approximately 52 days. This mode affects only the initial year of operation.
Start-up	For a typical combined cycle system, there are three types of starts - cold, warm, and hot. Cold starts occur after the turbine has been down for 72 or more hours, and according to the applicant, the start will last approximately 100 minutes (the time to

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Table 14 - Emissions from Emergency Blackstart Engine

Rated Horsepower	1005.75	BHP			
Electrical Capacity	750	eKW			
Monthly Maintenance Testing ¹	1.4	Hours/month			
Annual Maintenance Testing	17	Hours/year			
Diesel Fired	Emission Factor	Hourly	Monthly	Annual	30 Day Average
	gm/bhp-hr	lb/hr	lb/month	lb/year	lb/day
NOx	4.80	10.64	14.90	180.88	< 1
CO	2.61	5.78	8.09	98.26	0
VOC	0.02	0.04	0.056	0.68	0
SOx	N/A	0.01	0.014	0.17	0
PM10	0.022	0.048	0.068	0.816	0

Table 15 - Engine Parameters

Exhaust Gas Flowrate	5,646.8 acfm
Exit velocity	82.18 m/s
Exhaust temperature	949.8 deg F
Stack diameter	0.667 feet
Stack height	30 feet
Fuel consumption	53.5 gal/hr of diesel

Table 16 - Highest Single Hour Emissions (CTG + Blackstart Engine)

Pollutant	Operating Scenario	Emissions, lb/hr
NOx	Hot Start	32.92
CO	Cold Start	16.59
VOC	Hot Start	0.31
PM10	Normal Operation	3.13
SOx	Normal Operation	0.32
NH3	Normal Operation	3.19

Daily Emissions

Table 17 - Maximum Controlled Daily Emissions (CTG)

Pollutant	Operating Scenario	Maximum Daily Emissions (lb/day)
NOx	1.16 hr hot start + 21.83 hr normal + 1 hr shutdown	111.92
CO	1.67 hr cold start + 22.33 hr normal + 1 hr shutdown	65.26
VOC	24 hr normal	7.20
PM10	24 hr normal	67.2
SOx	24 hr normal	7.44
NH3	24 hr normal	76.56

¹ If monthly maintenance testing exceeds 1.4 hours, offsets will be needed.

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Cooling Tower Emissions

Table 22 - Cooling Tower Emissions

Design circulating water rate	14,000 gallons/min
Cycles of concentration	5.3
TDS	600 mg/liter; 5.01 lb/1,000 gal
Drift Eliminator Control	0.0005%
Annual operating hours	7,884
Drift PM10 emissions	0.11 lb/hr (total for both cells)
	878.7 lb/yr (total for both cells)
	0.44 tpy (total for both cells)

Assumptions:

- Orientation Long Axis from North ~ 35 deg E of N
- Height of tower stacks above grade 33-35 ft
- Stack height above cells ~ 10 ft
- Fan diameter 20 ft
- Stack exit temperature 100 deg F
- Stack exit speed 10 m/s

PROHIBITORY RULE EVALUATION

RULE 212-Standards for Approving Permits

Rule 212 requires that a person shall not build, erect, install, alter, or replace any equipment, the use of which may cause the issuance of air contaminants or the use of which may eliminate, reduce, or control the issuance of air contaminants without first obtaining written authorization for such construction from the Executive Officer. Rule 212(c) states that a project requires written notification if there is an emission increase for ANY criteria pollutant in excess of the daily maximums specified in Rule 212(g), if the equipment is located within 1,000 feet of the outer boundary of a school, or if the MICR is equal to or greater than one in a million (1EE-6) during a lifetime (70 years) for facilities with more than one permitted unit, source under Regulation XX, or equipment under Regulation XXX, unless the applicant demonstrates to the satisfaction of the Executive Officer that the total facility-wide maximum individual cancer risk is below ten in a million (10EE-6) using the risk assessment procedures and toxic air contaminants specified under Rule 1402; or, ten in a million (10EE-6) during a lifetime (70 years) for facilities with a single permitted unit, source under Regulation XX, or equipment under Regulation XXX. According to the applicant, the total facility wide residential MICR is expected to be less than 1EE-6, and the facility is located more than 1,000 feet from a school. Since there is no emission increase of criteria pollutants greater than the amounts shown in Rule 212(g) as shown in Table 23 below, and there is no school within 1,000 feet of the outer boundary of the facility and the toxic emissions are expected to be less than 1EE-6, a public notice is therefore not required.

Table 23 - Rule 212(g) Emission Thresholds vs Criteria Pollutant Increase

Pollutant	Rule 212(g) Emission Thresholds (lb/day)	Criteria Pollutant Emissions Increase (lb/day)	Below Threshold? (Yes/No)
NOx	40	(22.78)	Yes
CO	220	(86.19)	Yes
VOC	30	(22.65)	Yes
PM10	30	(3.13)	Yes
SOx	60	0	Yes

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RULE 431.1-Sulfur Content of Gaseous Fuels

El Colton, LLC will use pipeline quality natural gas which will comply with the 16 ppmv sulfur limit, calculated as H₂S, specified in this rule. Natural gas supplied by the Gas Company also has a sulfur content of less than 0.25 gr/100scf, which is equivalent to a sulfur concentration of about 4 ppmv. It is also much less than the 1 gr/100scf limit typical of pipeline quality natural gas. Compliance is expected.

RULE 474-Fuel Burning Equipment-Oxides of Nitrogen

Superseded by NOx RECLAIM.

RULE 475-Electric Power Generating Equipment

This rule applies to power generating equipment rated greater than 10 MW installed after May 7, 1976. Requirements specify that the equipment must comply with a PM₁₀ mass emission limit of 11 lb/hr or a PM₁₀ concentration limit of 0.01 grains/dscf. Compliance is demonstrated if either the mass emission limit or the concentration limit is met. The PM₁₀ mass emissions from the CTG is estimated to be 2.8 lb/hr. The estimated grain loading is less than 0.01 grain/dscf (see calculations under Rule 409 analysis). Therefore, compliance is expected. Compliance will be verified through performance tests.

Regulation XIII / Rule 2005 – New Source Review

BACT

BACT is required for all criteria pollutants. As such, the Executive Officer must deny a Permit to Construct for any new source which results in an emission increase of any non-attainment air contaminant, any ozone depleting compound, or ammonia unless the applicant can demonstrate that BACT is employed for the new source. For major sources, BACT is determined at the time the Permit to Construct is issued, and is the Lowest Achievable Emission Rate (LAER) which has been achieved in practice. Based on recently issued permits for combined cycle facilities including Magnolia Power (A/N 386305) and Vernon City Power (A/N 394164), AQMD has determined that BACT for combined cycle CTGs is as follows:

Table 22- BACT Requirements for Combined Cycle CTGs

NOx	CO	VOC	PM ₁₀	SOx	NH ₃
2.0 ppmvd, at 15% O ₂ , 1- hour rolling average	2.0 ppmvd, at 15% O ₂ , 1- hour rolling average	2.0 ppmvd, at 15% O ₂ , 1- hour rolling average	Pipeline quality natural gas	Pipeline quality natural gas with sulfur content ≤ 1 gr/ 100 scf (~16 ppmv)	5.0 ppmvd at 15% O ₂ , 1- hour rolling average

The applicant is proposing the following emission levels for this project. The emission levels of NOx, CO, VOC, and NH₃ in the table are manufacturer guaranteed emissions under normal operating conditions.

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Proposed BACT for Emergency Blackstart Engine

Pollutant	EPA Tier II Levels	Proposed BACT	Comply (Yes/No)
NOx+NMHC	4.8 gm/BHP-hr	4.8 gm/BHP-hr	Yes
CO	2.6 gm/BHP-hr	0.24 gm/BHP-hr	Yes
PM ₁₀	0.15 gm/BHP-hr	Particulate trap	Yes
SOx	On or after June 1, 2004 the user may only purchase diesel fuel with a sulfur content no greater than 0.0015% by weight (Rule 431.2)		Yes

The manufacturer has indicated that this engine can comply with the Tier II emission levels specified above, and the user will only purchase diesel fuel with a sulfur content of no greater than 0.0015% by weight. The emergency blackstart engine is expected to comply with BACT.

RULE 1303(b)(1) and Rule 2005(b)(1)(B) - Modeling

The air dispersion modeling and health risk analysis (HRA) for the proposed modification was submitted to AQMD with the original application package. The analyses included the HRA results from HARP Version 1.3. AQMD modeling staff reviewed the applicant's analyses for both air quality modeling and health risk assessment (HRA). Modeling staff provided their comments in a memorandum from Mr. Naveen Berry to Mr. Mike Mills dated April 8, 2009. A copy of this memorandum is contained in the engineering file. Staff's review of the modeling and HRA analyses concluded that the applicant used AERMOD version 04300 along with the appropriate model options in the analyses for NO₂, CO, PM₁₀, and SO₂. The applicant modeled both the cumulative and individual permit unit impacts for the project. The memorandum states that the modeling as performed by the applicant conforms to the District's dispersion modeling requirements. The applicant's analysis considered the effects of building downwash using the EPA's Building Profile Input Program (BPIP). Meteorological data were taken from the Riverside Municipal Airport Monitoring Station and included in the applicant's analysis. No significant deficiencies were reported.

Table A-2 shown below is found in AQMD Rule 1303 and lists the most stringent ambient air quality standards and allowable change in concentration for each air contaminant. The appropriate averaging times are also listed.

Table A-2
Most Stringent Ambient Air Quality Standard and
Allowable Change in Concentration
For Each Air Contaminant/Averaging Time Combination

Air Contaminant	Averaging Time	Most Stringent Air Quality Standard		Significant Change in Air Quality Concentration	
Nitrogen Dioxide	1-hour	25 pphm	333 µg/m ³	1 pphm	20 µg/m ³
	Annual	5.3 pphm	56 µg/m ³	0.05 pphm	1 µg/m ³
Carbon Monoxide	1-hour	20 ppm	23 mg/m ³	1 ppm	1.1 mg/m ³
	8-hour	9.0 ppm	10 mg/m ³	0.45 ppm	0.50 mg/m ³
Suspended Particulate Matter <10µm (PM ₁₀)	24-hour		50 µg/m ³		2.5 µg/m ³
	AGM ⁴		30 µg/m ³		1 µg/m ³
Sulfate	24-hour		25 µg/m ³		1 µg/m ³

⁴ AGM is the acronym for Annual Geometric Mean

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Table 27 - Rule 1401 Requirements

Parameters and Specifications	Rule 1401 Requirements
MICR, without T-BACT	$\leq 1 \times 10^{-6}$
MICR, with T-BACT	$\leq 1 \times 10^{-5}$
Acute Hazard Index	≤ 1.0
Chronic Hazard Index	≤ 1.0
Cancer Burden	≤ 0.5

The applicant performed a health risk assessment in which the analysis included an estimate of the MICR for the nearest receptors, as well as the acute and chronic hazard indices on a per unit basis. Table 28 below shows the results of the health risk assessment as performed by the applicant.

Table 28 - Rule 1401 Modeled Results

Risk Parameter	Risk/Hazard Index	Rule 1401 Requirements	Compliance (Yes/No)
MICR	0.24EE-8	$\leq 1.0 \text{EE-}6$	Yes
HIA	0.055	≤ 1.0	Yes
HIC	0.018	≤ 1.0	Yes

Table 28 shows that El Colton, LLC will comply with the applicable requirements of Rule 1401. The cancer-burden is not computed because the highest MICR for the turbine is less than $1 \text{EE}10^{-6}$ and the emergency blackstart engine is exempt from the requirements of Rule 1401. The applicant addressed the risk from the cooling tower in an analysis dated August 6, 2009 in which it was determined that the risk from the cooling tower was zero and the HIC and HIA were 0.62 and 0.032 respectively. Therefore, the project complies with the requirements of Rule 1401.

AQMD modeling staff has reviewed the health risk assessment for the proposed project and provided their comments in a memorandum from Mr. Naveen Berry to Mr. Mike Mills dated April 9, 2009. No discrepancies were noted.

REGULATION XVII-Prevention of Significant Deterioration

On July 25, 2007 AQMD and EPA have signed a new Partial PSD Delegation Agreement intended to delegate the authority and responsibility to AQMD for issuance of initial PSD permits and for PSD permit modifications where the applicant does not seek to use the emissions calculation methodologies promulgated in 40 CFR 52.21 (NSR Reform) but not set forth in AQMD Regulation XVII. The Partial Delegation agreement also does not delegate authority and responsibility to AQMD to issue new or modified PSD permits based on Plant-wide Applicability Limits (PALS) provisions of 40 CFR 52.21. Therefore, consistent with the Partial Delegation Agreement, for all new and modified PSD permits, AQMD will only use Regulation XVII as the bases for the PSD analysis.

The South Coast Basin where the project is to be located is in attainment for NO_x, SO₂, and CO emissions. Therefore PSD applies to these pollutants. For combined cycle projects, a significant emission increase is 40 tpy or more of NO_x or SO₂ or 100 tons per year or more of CO. The modifications proposed at the El Colton facility will not result in a significant increase of NO_x, SO₂, or CO. Therefore, a

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40CFR Part 60 Subpart GG – NSPS for Stationary Gas Turbines

The proposed modification to the CTG is subject to the requirements of 40CFR60 Subpart KKKK, and are exempt from 40CFR60 Subpart GG per 40 CFR60 Subpart KKKK, §60.4305 (b).

40CFR Part 60 Subpart KKKK – Standards of Performance for Stationary Combustion Turbines

Subpart KKKK establishes emission standards and compliance schedules for the control of emissions from stationary combustion turbines with a heat input greater than 10 MMBTU/hr (10.7 gigajoules per hour), based on higher heating value, which commenced construction, modification or reconstruction after February 18, 2005.

§60.4320(a) The CTG is natural gas-fired and has a heat input > 50 MMBTU/hr but ≤ 850 MMBTU/hr, therefore, it is subject to a NO_x emission limit of 42 ppmv @ 15% O₂ from Table 1 of this subpart. The turbine is required to comply with BACT for NO_x which is officially at 2.0 ppmv at 15% O₂, dry basis for a combined cycle plant. It is anticipated that the CTGs will meet a NO_x level of 2.0 ppmv or less at 15% O₂ on a 1-hour average which is more stringent than this subpart. Therefore, compliance with this section is expected.

§60.4330(a)(2) Natural gas fuel burned in the turbine has a sulfur content of 0.0006 lb-SO₂/MMBtu, which is less than 0.06 lb-SO₂/MMBTU (26 ng-SO₂/J) required by this section. Therefore, compliance with the sulfur dioxide limits of this section is expected.

§60.4335 The gas turbine use water injection to help reduce NO_x to compliance levels. Monitoring is required and will be accomplished with a CEMS; therefore, compliance with this section is expected with a certified CEMS.

§60.4345 The CEMS is required to be certified according to the Performance Specification 2 (PS 2) in appendix B to this part. SCE will be required to file a CEMS application package with Source Test Engineering to certify the CEMS to meet the requirements of Rule 218 or 40CFR60 Appendix B. Therefore, compliance with this section is expected.

§60.4400(a) An initial source test will be required per §60.8. The annual source testing requirement for NO_x will be satisfied through the annual RATAs performed on the CEMS. Compliance with the source testing requirements is expected.

40CFR Part 72 – Acid Rain Provisions

El Colton, LLC is subject to the requirements of the federal Acid Rain program because the electricity generated will be rated at greater than 25 MW. This program is similar to RECLAIM in that facilities are required to cover SO₂ emissions with SO₂ allowances that are similar in concept to RTC's. SO₂ allowances are however, not required in any year when the unit emits less than 1,000 lbs of SO₂. Facilities with insufficient allowances are required to purchase SO₂ credits on the open market. In addition, both NO_x and SO₂ emissions will be monitored and reported directly to USEPA. Based on the above, compliance with this rule is expected.

REGULATION XXX – Title V

El Colton, LLC is a Title V facility because the cumulative emissions will exceed the Title V major source thresholds and because it is also subject to the federal acid rain provisions. This application is for a Title V

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Requirements:

Attainment Areas (PSD)

- Effective date of the rule for both delegated and SIP-Approved S/L is July 15, 2008.
- Implementation date deadline for EPA & delegated S/L (40CFR 52.21) is July 15, 2008.
- Implementation date deadline for SIP-Approved S/L (40CFR 51.166) is July 15, 2011, until which time S/L follow PM10 surrogate policy.
- BACT applies to emission units at new major sources with significant emissions or direct PM2.5 or SO2 & NOx.
- BACT applies to all emission units part of a major modification which emit direct PM2.5 or SO2 & NOx.

Non-Attainment Areas (NA NSR)

- Effective date of the rule for both EPA (NA NSR rules in 40CFR part 51 Appendix S) and SIP-Approved S/L is July 15, 2008.
- Implementation date deadline for EPA under Appendix S is July 15, 2008, and can no longer use PM10 surrogate program any more.
- Implementation date deadline for S/L with SIP-Approved NA NSR rules is July 15, 2011 to revise SIP consistent with 40CFR 51.165, however until then and effective July 15, 2008, S/L must follow Appendix S requirements for PM2.5 and can no longer use PM10 surrogate. This basically means that effective July 15, 2008 EPA and all S/L have to implement PM2.5 NA NSR through Appendix S.
- LAER, Offsets & other requirements for PM2.5 apply on effective date of Appendix S, or July 15, 2008.
- If S/L is unable to implement through Appendix S, EPA will implement the NA NSR requirements.
- In the interim and until S/L can get their NA NSR rules SIP-Approved, under Appendix S, the only PM2.5 precursor is SO2.
- Under SIP-Approved NA NSR, SO2 is always a precursor, NOx is "presumed in" and VOCs & NH3 are "presumed out", unless S/L makes appropriate demonstration for NOx, VOCs & NH3 and EPA approves a change in the presumption.
- Offset Ratio for PM2.5 is at least 1-to-1.
- Inter-pollutant Trading for precursors is allowed. In the preamble, EPA has proposed SO2 to PM2.5 at a ratio of 40-to-1, and NOx to PM2.5 at ratios of 200-to-1 and 100-to-1 for Eastern and Western parts of the U.S., respectively. S/L may propose a different inter-pollutant trade ratio through modeling, subject to EPA approval

EI Colton is located in a non-attainment area for PM2.5. Therefore, LAER and offset thresholds for non-attainment areas apply. For purposes of this rule, PM2.5 is assumed to be 100% of PM10. The tables below are a compliance determination for EI Colton with respect to EPA's NSR program for PM2.5 sources.

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[Rule 1303 - BACT]

- A195.1 The 2.0 PPMV CO emission limit(s) is averaged over 60 minutes at 15 percent O₂, dry.
[Rule 1703(a) (2) - PSD-BACT]
- A195.2 The 2.0 PPMV NO_x emission limit(s) is averaged over 60 minutes at 15 percent O₂, dry.
[Rule 1703(a) (2) - PSD-BACT, Rule 2005]
- A195.3 The 2.0 ppmv VOC emission limit(s) is averaged over 60 minutes at 15 percent O₂, dry.
[Rule 1303(a) - BACT]
- A327.1 For the purpose of determining compliance with District Rule 475, combustion contaminants emissions may exceed the concentration limit or the mass emission limit listed, but not both limits at the same time.
[Rule 475]
- A433.1 The operator shall comply at all times with the 2.0 ppm 1-hour BACT limit for NO_x, except as defined in condition A99.1 and for the following scenario:

Operating Scenario	Maximum Hourly Emission Limit	Operational Limit
Cold Start-up	21.6 lb/hr	NO _x emissions not to exceed 36 lbs total per start-up per turbine. The turbine shall be limited to 12 cold start-ups per year, with each start-up not to exceed 100 minutes.
Hot Start-up	22.29 lb/hr	NO _x emissions not to exceed 26 lbs total per start-up per turbine. Each turbine shall be limited to 365 start-ups per year, with each start-up not to exceed 60 minutes.

[Rule 1703(a) (2) - PSD-BACT, Rule 2005]

- B61.1 The operator shall not use natural gas containing the following specified compounds:

Compound	Grains per 100 scf
H ₂ S	0.25

This concentration limit is an annual average based on monthly samples of natural gas composition or gas supplier documentation. The gaseous fuel sample shall be tested using District method 307-91 for total sulfur calculated as H₂S.

[Rule 1303(b) - Offset]

- C1.1 The operator shall limit the fuel usage to no more than 341 mmcsf in any one calendar month.

The operator shall maintain records in a manner approved by the District to demonstrate compliance with this condition.

[Rule 1303(b) (2) - Offset]

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For the purpose of this condition, alternative test methods may be allowed for each of the above pollutants upon concurrence of AQMD and EPA.

[Rule 1303(a) (1) - BACT, Rule 1703(a) (2) - PSD-BACT, Rule 1303(b) (2) - Offset, Rule 2005,]

D29.2 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant to be tested	Required Test Method(s)	Averaging Time	Test Location
NH3 emissions	District method 207.1 and 5.3 or EPA method 17	1 hour	Outlet of the SCR

The test shall be conducted and the results submitted to the District within 45 days after the test date. The AQMD shall be notified of the date and time of the test at least 7 days prior to the test.

The test shall be conducted at least quarterly during the first twelve months of operation and at least annually thereafter. The NOx concentration, as determined by the CEMS, shall be simultaneously recorded during the ammonia slip test. If the CEMS is inoperable, a test shall be conducted to determine the NOx emissions using District Method 100.1 measured over a 60 minute averaging time period.

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration limit

If the equipment is not operated in any given quarter, the operator may elect to defer the required testing to a quarter in which the equipment is operated.

[Rule 1303(a) (1) - BACT]

D29.3 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant to be tested	Required Test Method(s)	Averaging Time	Test Location
SOX emissions	AQMD Method 307-91	Not Applicable	Fuel Sample
VOC emissions	District Method 25.3	1 hour	Outlet of the SCR
PM10 emissions	District Method 5	4 hours	Outlet of the SCR

The test shall be conducted at least once every three years for SOx and PM10, and yearly for VOC.

The test shall be conducted to determine the oxygen levels in the exhaust. In addition, the tests shall measure the fuel flow rate (CFH), the flue gas flow rate, and the turbine generating output in MW.

The test shall be conducted in accordance with AQMD approved test protocol. The protocol shall be submitted to the AQMD engineer no later than 45 days before the proposed test date and shall be approved by the AQMD before the test commences. The test protocol shall include the proposed operating conditions of the turbine during the tests, the identity of the testing lab, a statement from the testing lab certifying that it meets the criteria of Rule 304, and a description of all sampling and analytical procedures.

The test shall be conducted when this equipment is operating at 100 percent load.

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Qg = Fuel gas usage during the hour, scf/hr

HHV = Gross high heating value of fuel gas, BTU/scf
[Rule 1703(a) (2) - PSD-BACT]

D82.2 The operator shall install and maintain a CEMS to measure the following parameters:

NOx concentration in ppmv

Concentrations shall be corrected to 15 percent oxygen on a dry basis. The CEMS shall be installed and operating no later than 90 days after initial start-up of the turbine and shall comply with the requirements of Rule 2012. During the interim period between the initial start-up and the provisional certification date of the CEMS, the operator shall comply with the monitoring requirements of Rule 2012(h) (2) and 2012(h) (3). Within two weeks of the turbine start-up date, the operator shall provide written notification to the District of the exact date of start-up.

The CEMS shall be installed and operating (for BACT purposes only) no later than 90 days after initial start up of the turbine.
[Rule 1703(a) (2) - PSD-BACT, Rule 2005, Rule 2012]

I296.1 This equipment shall not be operated unless the operator demonstrates to the Executive Officer that the facility holds sufficient RTCs to offset the prorated annual emissions increase for the first compliance year of operation. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at the commencement of each compliance year after the first compliance year of operation, the facility holds sufficient RTCs in an amount equal to the annual emission increase.

To comply with this condition, the operator shall prior to the combined cycle CTG 1st compliance year hold a minimum NOx RTCs of 39,755 lbs/yr. This condition shall apply during the 1st months of operation, commencing with the initial operation of the gas turbine.

To comply with this condition, the operator shall, prior to the beginning of all years subsequent to the combined cycle CTG 1st compliance year, hold a minimum of lbs/yr of 43,169 NOx RTC's for operation of the gas turbine. In accordance with Rule 2005(f), unused RTC's may be sold only during the reconciliation period for the fourth quarter of the applicable compliance year inclusive of the 1st compliance year. This condition shall apply to each turbine individually.
[Rule 2005]

K40.1 The operator shall provide to the District a source test report in accordance with the following specifications:

Source test results shall be submitted to the District no later than 60 days after the source test was conducted.

Emission data shall be expressed in terms of concentration (ppmv) corrected to 15 percent oxygen (dry basis), mass rate (lb/hr), and lb/MMCF. In addition, solid PM emissions, if required to be tested, shall also be reported in terms of grains/DSCF.

All exhaust flow rate shall be expressed in terms of dry standard cubic feet per minute (DSCFM) and dry actual cubic feet per minute.

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The operator shall also install and maintain a device to continuously record the parameter being measured.
The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every twelve months.
The temperature shall remain between 500 degrees F and 800 degrees F
The catalyst temperature shall not exceed 800 degrees F during the start-up period.

[Rule 1303(a) (1) - BACT, Rule 1703(a) (2) - PSD-BACT, Rule 2005]

- D12.3 The operator shall install and maintain a(n) pressure gauge to accurately indicate the differential pressure across the SCR catalyst bed in inches of water column.

The operator shall also install and maintain a device to continuously record the parameter being measured.
The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every twelve months.
The pressure drop across the catalyst shall remain between 5 inches of water column and 7.6 inches of water column.
The pressure drop across the catalyst shall not exceed 7.6 inches of water column during the start-up period.

[Rule 1303(a) (1) - BACT, Rule 1703(a) (2) - PSD-BACT, Rule 2005]

- E179.1 For the purpose of the following condition number(s), continuously record shall be defined as recording at least once every hour and shall be calculated based upon the average of the continuous monitoring for that hour.

Condition Number D12.2

Condition Number D12.3

[Rule 1303(a) (1) - BACT, Rule 1703(a) (2) - PSD-BACT]

- E179.2 For the purpose of the following condition numbers, continuously record shall be defined as measuring at least once every month and shall be calculated based upon the average of the continuous monitoring for that month.

Condition Number: D12.3

[Rule 1303(a) (1) - BACT, Rule 1703(a) (2) - PSD-BACT]

(Emergency Blackstart Engine)

- C1.2 The operator shall limit the operating time to no more than 17 hours in any one year.

For the purposes of this condition, the operating time is inclusive of time allotted for maintenance and testing

[Rule 1110.2, Rule 1304, Rule 2012]

- C1.3 The operator shall limit the operating time to no more than 1.4 hours in any one month.

For the purposes of this condition, the operating time is inclusive of time allotted for maintenance and testing

[Rule 1110.2, Rule 1304, Rule 2012]

- D12.4 The operator shall install and maintain a(n) non-resettable elapsed meter to accurately indicate the elapsed operating time of the engine.

[Rule 1304, Rule 1470, Rule 2012]

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K67.2 The operator shall keep records in a manner approved by the Executive Officer, for the following parameter(s) or item(s):

Date of operation, the elapsed time, in hours, and the reason for operation
[Rule 1110.2]

Appendix A - El COLTON, LLC

GE LM6000 CTG Monthly & Daily Emissions - Normal Operations

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Maximum Daily Emissions (Controlled)

Pollutant	hot start lb/hr	hot start hr	cold start lb/hr	cold start hr	normal lb/hr	normal hr	shutdown lb/hr	shutdown hr	Total lb/day
NOx	22.29	1.16	N/A	N/A	3.45	21.83	10.75	1.00	111.92
CO	N/A	N/A	10.80	1.67	1.90	22.33	4.80	1.00	65.26
VOC	N/A	N/A	N/A	N/A	0.30	24.00	N/A	N/A	7.20
PM10	N/A	N/A	N/A	N/A	2.80	24.00	N/A	N/A	67.20
SOx	N/A	N/A	N/A	N/A	0.31	24.00	N/A	N/A	7.44
NH3	N/A	N/A	N/A	N/A	3.19	24.00	N/A	N/A	76.56

Monthly Emissions (Controlled)

Pollutant	hot start lb/hr	hot start hr	cold start lb/hr	cold start hr	normal lb/hr	normal hr	shutdown lb/hr	shutdown hr	Total lb/month	30DA lb/day
NOx	22.29	35.00	21.60	N/A	3.45	676.50	10.75	31.00	3124.83	104.16
CO	10.29	35.00	10.80	1.67	1.90	676.50	4.80	31.00	1668.34	55.61
VOC	N/A	N/A	N/A	N/A	0.30	744.00	N/A	N/A	223.20	7.44
PM10	N/A	N/A	N/A	N/A	2.80	744.00	N/A	N/A	2083.20	69.44
SOx	N/A	N/A	N/A	N/A	0.31	744.00	N/A	N/A	230.64	7.69
NH3	N/A	N/A	N/A	N/A	3.19	744.00	N/A	N/A	2373.36	79.11

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Standard Conditions: 29.92 inches Hg and 68 degrees Fahrenheit

$$\text{Emission Factor (lb/MMBTU)} = (\text{ppmvd}) * (\text{MW}) * (1/\text{SMV}) * (20.9/5.9) * (\text{Fd}) * (1/1\text{E6})$$

where,

controlled ppmvd = controlled concentration corrected to 15% O₂

MW = molecular weight (lb/lb-mol)

SMV = specific molar volume at 68 degrees Fahrenheit = 385.3 dscf/lb-mol

Fd = dry oxygen F-factor for natural gas = 8,710 dscf/MMBTU at 68 degrees Fahrenheit

$$\text{Emission Rate Uncontrolled} = \text{Emission Factor Uncontrolled} * \text{Heat Input (MMBTU/hr)}$$
$$\text{Emission Rate Controlled} = \text{Emission Factor Controlled (lb/MMBTU)} * \text{Heat Input (MMBTU/hr)}$$

Operating Condition Number	Heat Input (MMBTU/hr)	Pollutant Conc. Controlled (ppmvd)	Molecular Weight (lb/lb-mol)	Specific Molar Volume (dscf/lb-mol)	Dry Fuel Factor (dscf/MMBTU)	Emission Factor (lb/MMBTU)	Emission Rate (lb/hr)
1	468.0	5	17	385.3	8,710	0.0068	3.19
2	459.3	5	17	385.3	8,710	0.0068	3.13
3	452.0	5	17	385.3	8,710	0.0068	3.08
4	427.6	5	17	385.3	8,710	0.0068	2.91
Average							3.07

[illegible]

Appendix A - El COLTON, LLC

GE LM6000 CTG Annual Emissions - Normal Operations

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Annual Emissions (Controlled) Non-Commissioning Year

Pollutant	hot start lb/hr	hot start hr	cold start lb/hr	cold start hr	normal lb/hr	normal hr	shutdown lb/hr	shutdown hr	Total lb/year
NOx	22.29	353.00	21.60	12.00	3.45	8,030.00	10.75	365.00	39,754.82
CO	10.29	353.00	21.60	12.00	1.90	8,030.00	4.80	365.00	19,153.37
VOC	N/A	N/A	N/A	N/A	0.30	8,760.00	N/A	N/A	2,628.00
PM10	N/A	N/A	N/A	N/A	2.80	8,760.00	N/A	N/A	24,528.00
SOx	N/A	N/A	N/A	N/A	0.31	8,760.00	N/A	N/A	2,715.60
NH3	N/A	N/A	N/A	N/A	3.19	8,030.00	N/A	N/A	25,615.70

Annual Emissions (Controlled) Commissioning Year

Pollutant	Total lb/year	478 Hrs Normal Operation (lb/yr)	478 Hrs Commissioning (lb/yr)	Annual Emissions Commissioning Yr (lb/yr)
NOx	39,754.82	1,649.10	5,063.64	43,169.36
CO	19,153.37	908.20	1,985.46	20,230.63
VOC	2,628.00			2,628.00
PM10	24,528.00			24,528.00
SOx	2,715.60			2,715.60
NH3	25,615.70			25,615.70